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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,674	10/23/2001	M. Michael Wolfe	50128/002003	8781

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EXAMINER	
ROMEO, DAVID S	

ART UNIT	PAPER NUMBER
1647	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/003,674	WOLFE ET AL.	
	Examiner	Art Unit	
	David S. Romeo	1647	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *36-89* is/are pending in the application.

4a) Of the above claim(s) *46-50,52,54,56,57,68-72,74,76,78-82,84 and 86-89* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *83 and 85* is/are objected to.

8)☒ Claim(s) *36-89* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The amendment filed 07/21/2006 has been entered. Claims 36–89 are pending. Applicant's elected without traverse group I, claims 1–34, and the species SEQ ID NO: 2 in the paper filed 02/09/2004. Applicant's elected with traverse the species "dispersing" and "normal saline" in the paper filed 02/09/2004. The requirement was still deemed proper and was therefore made FINAL.

Election/Restrictions

Newly submitted claims 46–50, 52, 54, 56–57, 68–72, 74, 76, 78–82, 84 and 86–89 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

Newly submitted claims 46–48, 56–57, 68–70, 78, 80–82 and 86–87 are directed to methods of treatment comprising administering a GIP antagonist polypeptide, classified in class 514, subclass 12. The invention originally claimed is directed to a GIP antagonist polypeptide, classifies in class 530, subclass 300. Newly submitted claims 46–48, 56–57, 68–70, 78, 80–82 and 86–87 and the invention originally claimed are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the process for using the product can be practiced with an antibody. The product can be used in an immunization protocol for the production of antibodies thereto

Newly submitted claims 79 and 88–89 are directed to methods of treatment comprising administering an antibody against a GIP antagonist polypeptide, classified in class 424, subclass 130.1. The invention originally claimed is directed to a GIP antagonist polypeptide, classifies in class 530, subclass 300. Newly submitted claims 79 and 88–89 and the invention originally claimed are directed to an unrelated product and process. Product and process inventions are unrelated if it can be shown that the product cannot be used in, or made by, the process. See MPEP § 802.01 and § 806.06. In the instant case, the product cannot be used in the process because it would negate the effect of the antibody. Nor is the product made by the process.

Newly submitted claims 49–50, 52, 54, 71–72, 74, 76 and 84 are directed to an antibody against a GIP antagonist polypeptide, classified in class 530, subclass 387.1. The invention originally claimed is directed to a GIP antagonist polypeptide, classifies in class 530, subclass 300. The GIP antagonist polypeptide and the antibody are patentably distinct for the following reasons: While both inventions are polypeptides, in this instance the GIP antagonist polypeptide is a single chain molecule, whereas the antibody comprises heavy and light chains containing constant and variable regions, and including framework regions which act as a scaffold for the 6 complementarity determining regions (CDRs) that function to bind an epitope. Thus the GIP antagonist polypeptide and the antibody are structurally distinct molecules. Furthermore, searching the inventions together would impose a serious search burden. The inventions have a separate status in the art as shown by their different classifications. A polypeptide and an antibody which binds to the polypeptide require different searches. An amino acid sequence search of the full-length protein is necessary for a determination of novelty and unobviousness of the protein. However, such a search is not required to identify antibodies. Furthermore, antibodies which bind to an epitope of a GIP antagonist polypeptide may be known even if a GIP antagonist polypeptide is novel. In addition, the technical literature search for the GIP antagonist polypeptide and the antibody are not coextensive because antibodies may be characterized in the technical literature prior to discovery of or sequence of their binding target.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 46–50, 52, 54, 56–57, 68–72, 74, 76, 78–82, 84 and 86–89 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claims 36–45, 51, 53, 55, 58–67, 73, 75 and 77 are being examined to the extent that they are directed to SEQ ID NO: 2, a dispersing agent normal saline.

New Formal Matters, Objections, and/or Rejections:

Claim Objections

Claims 83 and 85 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See

MPEP § 608.01(n). Since claim 85 depends from claim 83 it also shares this defect. Accordingly, the claims have not been further treated on the merits.

Claims 40, 42–45, 59 and 62–67 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The polypeptide of claims 40 and 42–45 could be infringed without infringing the polypeptide of claim 36. The polypeptide of claims 59 and 62–67 could be infringed without infringing the polypeptide of claim 58.

Claim Rejections - 35 USC § 112

Claims 37, 40–45, 59 and 62–67 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Support for the 95% identity limitation and the indicated amino acid substitutions cannot be found in the disclosure as originally filed. The introduction of these limitations raises the issue of new matter.

Applicant argues that:

> In fact, rat and human GIP have the same function, differing only in a single amino acid at position 18 of SEQ ID NO:2. The difference is his/arg, each considered an equivalent to the other. This is support for the different equivalent substitutions claimed by Applicants in the 7-30 and 10-30 GIP amino acid segments.

Applicant's arguments have been fully considered but they are not persuasive. The fact that rat GIP differs from human GIP by a single amino acid at position 12 of SEQ ID NO:2 (the difference is his/arg) may support a his/arg substitution at this position. However, the claims are directed to or encompass replacement of his at position of 12 of SEQ ID NO: 2 with arginine or lysine. While it might be obvious to a skilled artisan to substitute his at position 12 of SEQ ID NO: 2 with lysine, the written description does not extend to subject matter which is not disclosed, but would be obvious over what is expressly disclosed. It extends only to that which is disclosed. One shows that one is in possession of the invention by describing the invention, with all its claimed limitations, not that which makes it obvious. Therefore, the his/arg

difference between rat and human GIP does not evince that applicant considered a lysine substitution at position 12 of SEQ ID NO: 2 as part of the invention.

Applicant argues that:

> The comparable rat/human GIP activity also supports a claim to a 95% identity to the 7-30 and 10-30 GIP segments because of the single difference between rat and human GIP.

Applicant's arguments have been fully considered but they are not persuasive. The 95% identity to the 7- 30 and 10-30 GIP segments encompasses variants that differ anywhere and everywhere from the rat or human GIP within the metes and bounds of the 95% identity limitation. Therefore, the scope of the 95% identity limitation is broader than a single his/arg substitution at position 12 of SEQ ID NO: 2, changes the meaning, scope and content of the disclosure, introduces new concepts, and violates the description requirement of the first paragraph of 35 U.S.C. 112.

Claims 37, 39, 41, 58–59 and 61 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 37 is indefinite over the recitation of "95% identical to corresponding consecutive amino acids of SEQ ID NO: 2" because it is unclear if the claimed polypeptide is 95% identical to SEQ ID NO: 2 or if it is 95% identical to some indeterminate number of consecutive amino acids of SEQ ID NO: 2. The metes and bounds are not clearly set forth. If applicant wants to claim a polypeptide that is 95% identical to SEQ ID NO: 2 it is suggested that the claim recite "95% identical to SEQ ID NO: 2." Claim 59 also shares this defect and is rejected on these same grounds and for the same reasons that claim 37 is rejected.

Claim 41 is indefinite because there is a lack of antecedent basis for "the neutral amino acid" and because it is unclear which neutral amino acid is intended. The metes and bounds are not clearly set forth.

Claim 58 is indefinite over the recitation of "a contiguous amino acid sequence from position 4-24 of SEQ ID NO: 2" because it is unclear if the claimed polypeptide comprises amino acids 4-24 of SEQ ID NO: 2 or if it comprises an indeterminate fragment of contiguous amino acids 4-24 of SEQ ID NO: 2. The metes and bounds are not clearly set forth. If applicant

wants to claim a polypeptide comprising amino acids 4-24 of SEQ ID NO: 2 it is suggested that the claim recite "An isolated polypeptide comprising amino acids 4-24 of SEQ ID NO: 2.

Claims 39 and 61 are indefinite because it is unclear if the claimed polypeptide comprises or consists of SEQ ID NO: 2. The metes and bounds are not clearly set forth.

Claim Rejections - 35 USC § 102

Claims 36, 55, 58 and 77 are rejected under 35 U.S.C. 102(b) as being anticipated by Moody (FEBS Lett. 1984 Jul 9;172(2):142-8) in view of Takeda (Proc Natl Acad Sci U S A. 1987 Oct;84(20):7005-8).

A 35 U.S.C. 102 rejection over multiple references has been held to be proper when the extra references are cited to:

(A) Prove the primary reference contains an "enabled disclosure;"
(B) Explain the meaning of a term used in the primary reference; or
(C) Show that a characteristic not disclosed in the reference is inherent.

Moody discloses the isolation of human GIP 1–42 and a freeze-dried (lyophilized) form thereof (page 142, Abstract; page 144, left column, last full paragraph). Although Moody discloses the sequence of human GIP as Tyr-Ala-Glu-Gly-Thr-Phe-Ile-Ser-Asp-Tyr-Ser-Ile-Ala-Met-Asp-Lys-Ile-His-Gln-Gln-Asp-Phe-Val-Asn-Trp-Leu-Leu-Ala-Glu-Lys-Gly-Lys-Lys-Asn-Asp-Trp-Lys-His-Asn-Ile-Thr-Gln (page 142, Abstract), which differs from SEQ ID NO: 2 by the substitution of a Glu for a Gln at position 23 of SEQ ID NO: 2, Moody also indicates the amino acid sequence of human GIP as Tyr-Ala-Glu-Gly-Thr-Phe-Ile-Ser-Asp-Tyr-Ser-Ile-Ala-Met-Asp-Lys-Ile-His-Gln-Gln-Asp-Phe-Val-Asn-Trp-Leu-Leu-Ala-Gln-Lys-Gly-Lys-Lys-Asn-Asp-Trp-Lys-His-Asn-Ile-Thr-Gln (page 146, Fig. 5), which comprises the amino acid sequence of SEQ ID NO: 2. Moody further indicates that residue 29 is Gln, which corresponds to the Gln at position of 23 of SEQ ID NO: 2. Furthermore, Takeda discloses the predicted amino acid sequence of mature GIP, which comprises the amino acid sequence of SEQ ID NO: 2 (page 7007, Fig 3). Takeda indicates that the predicted sequence of GIP agrees exactly with that determined by Moody (page 7006, sentence bridging left and right columns).

Accordingly, Moody discloses an isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 2 and a lyophilized form thereof.

Claims 45 and 67 are rejected under 35 U.S.C. 102(b) as being anticipated by Agerberth (Eur J Biochem. 1993 Sep 1;216(2):623-9).

Agerberth discloses the isolation of GIP (7-42) (paragraph bridging pages 624-625. GIP (7-42) comprises the amino acid sequence of SEQ ID NO: 2 wherein the histidine at position 12 of SEQ ID NO: 2 is replaced with arginine (page 628, Fig. 7).

Claims 37 and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Gelling (Regul Pept. 1997 Apr 30;69(3):151-4).

Under 35 U.S.C. 120, the claims in a U.S. application are entitled to the benefit of the filing date of an earlier filed U.S. application if the subject matter of the claim is disclosed in the manner provided by 35 U.S.C. 112, first paragraph in the earlier filed application.

Under 35 U.S.C. 119 (e), the claims in a U.S. application are entitled to the benefit of the filing date of a provisional application if the corresponding provisional application supports the claims in the manner required by 35 U.S.C. 112, first paragraph.

The 95% identity limitation violates the description requirement of the first paragraph of 35 U.S.C. 112, as discussed above. Therefore, the subject matter of claims 37 and 59 is not entitled to the to the benefit of the filing dates of any of the earlier filed applications.

Gelling teaches porcine GIP_{10-30}, $_{6-30}$, and $_{7-30}$ antagonistic peptides (Abstract). Twenty-three of the 24 amino acids of porcine GIP_{6-30} that correspond to SEQ ID NO: 2 are identical to SEQ ID NO: 2. Therefore, Gelling discloses an GIP antagonist that is at least 95% identical to corresponding consecutive amino acids of SEQ ID NO: 2. Twenty of the 21 amino acids of porcine GIP_{6-30} that correspond to amino acids 4-24 of SEQ ID NO: 2 are identical to amino acids 4-24 of SEQ ID NO: 2. Therefore, Gelling discloses an GIP antagonist that is at least 95% identical to corresponding consecutive amino acids at positions 4-24 of SEQ ID NO: 2.

Claim Rejections - 35 USC § 103

Claims 36, 51, 53, 58, 73 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moody (FEBS Lett. 1984 Jul 9;172(2):142-8) in view of Takeda (Proc Natl Acad Sci U S A. 1987 Oct;84(20):7005-8) as applied to claims 36 and 58 above, and further in

view of Turco ("Intravenous Admixtures", Chapter 85, in, Remington's Pharmaceutical Sciences, 18th edition (June 1990), Mack Pub. Co., Easton, Pennsylvania, page 1570).

Moody in view of Takeda discloses an isolated polypeptide comprising the amino acid sequence of SEQ ID NO: 2 and a lyophilized form thereof, as discussed above. Moody also discloses that GIP could be of use in at least some diabetics (page 142, paragraph bridging left and right columns). Takeda discloses that the elucidation of the primary structure of the human GIP precursor now allows examination of the biosynthesis and physiological properties of this interesting hormone in more detail. In particular, it will be important to critically address its possible role in the regulation of plasma glucose levels and its utility in the treatment of diabetes through its ability to stimulate insulin secretion. See page 7008, left column, last paragraph. Moody in view of Takeda do not disclose, only in the sense that Moody in view of Takeda do not anticipate, a composition comprising human GIP in a pharmaceutically acceptable carrier.

Turco teaches that proper electrolyte concentration and balance in plasma and tissues are critical for proper body function and that the electrolytes in normal saline more closely approximate the composition of the extracellular fluid than solutions of any other single salt (page 1570, column 2, bottom). Turco does not teach a pharmaceutical composition comprising human GIP and normal saline.

However, it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to make a human GIP, as taught by Moody in view of Takeda, and to modify that teaching by making a composition comprising human GIP in normal saline (a pharmaceutically acceptable carrier), with a reasonable expectation of success. One of ordinary skill in the art would be motivated to make this modification because GIP could be of use in at least some diabetics, because such a composition would allow one to examine the physiological properties of GIP in more detail and address its possible role in the regulation of plasma glucose levels and its utility in the treatment of diabetes, and because the electrolytes in normal saline more closely approximate the composition of the extracellular fluid than solutions of any other single salt. To the extent that the GIP is dissolved or dispersed in normal saline, then normal saline is a dispersing agent. The invention is prima facie obvious over the prior art.

Maintained Formal Matters, Objections, and/or Rejections:

Double Patenting

Claims 58–61, 67, 73, 75 and 77 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1–5 of U. S. Patent No. 7,091,183. It is acknowledged that applicant believes that the rejection may be overcome with a terminal disclaimer, and that applicant respectfully defers a response until claims in each application are resolved.

Conclusion

No claims are allowable. Claim 38 is objected to as being dependent upon a rejected base claim.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

ANY INQUIRY CONCERNING THIS COMMUNICATION OR EARLIER COMMUNICATIONS FROM THE EXAMINER SHOULD BE DIRECTED TO DAVID S. ROMEO WHOSE TELEPHONE NUMBER IS (571) 272-0890. THE EXAMINER CAN NORMALLY BE REACHED ON MONDAY THROUGH FRIDAY FROM 9:00 A.M. TO 5:30 P.M. IF ATTEMPTS TO REACH THE EXAMINER BY TELEPHONE ARE UNSUCCESSFUL, THE EXAMINER'S SUPERVISOR, BRENDA BRUMBACK, CAN BE REACHED ON (571) 272-0961.

IF SUBMITTING OFFICIAL CORRESPONDENCE BY FAX, APPLICANTS ARE ENCOURAGED TO SUBMIT OFFICIAL CORRESPONDENCE TO THE CENTRAL FAX NUMBER FOR OFFICIAL CORRESPONDENCE, WHICH IS (571) 273-8300.

CUSTOMERS ARE ALSO ADVISED TO USE CERTIFICATE OF FACSIMILE PROCEDURES WHEN SUBMITTING A REPLY TO A NON-FINAL OR FINAL OFFICE ACTION BY FACSIMILE (SEE 37 CFR 1.6 AND 1.8).

ANY INQUIRY OF A GENERAL NATURE OR RELATING TO THE STATUS OF THIS APPLICATION OR PROCEEDING MAY BE OBTAINED FROM THE PATENT APPLICATION INFORMATION RETRIEVAL (PAIR) SYSTEM. STATUS INFORMATION FOR PUBLISHED APPLICATIONS MAY BE OBTAINED FROM EITHER PRIVATE PAIR OR PUBLIC PAIR. STATUS INFORMATION FOR UNPUBLISHED APPLICATIONS IS AVAILABLE THROUGH PRIVATE PAIR ONLY. FOR MORE INFORMATION ABOUT THE PAIR SYSTEM, SEE HTTP://PAIR-DIRECT.USPTO.GOV. CONTACT THE ELECTRONIC BUSINESS CENTER (EBC) AT 866-217-9197 (TOLL-FREE) FOR QUESTIONS ON ACCESS TO THE PRIVATE PAIR SYSTEM,

DAVID ROMEO
PRIMARY EXAMINER
ART UNIT 1647

DSR
DECEMBER 9, 2006